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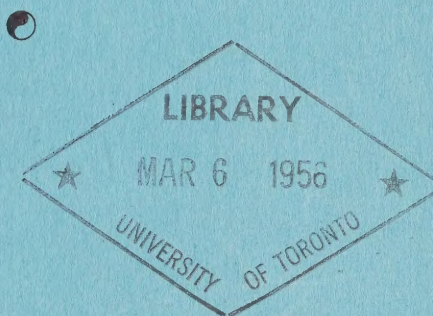
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AN ANALYSIS
OF THE
CARPENTRY TRADE



PREPARED BY
A NATIONAL COMMITTEE
APPOINTED BY
the Training Branch of
THE DEPARTMENT OF LABOUR
OTTAWA, CANADA
1955

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AN ANALYSIS OF THE CARPENTRY TRADE

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E. A. Fitzgerald
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INTRODUCTION

The first National Conference on Apprenticeship in Trades and Industries held at Ottawa in May 1952, recommended that the Federal Government be requested to co-operate with Provincial apprenticeship committees and others concerned in preparing analyses of a number of skilled occupations.

In implementing the above recommendation, the Training Branch of the Federal Department of Labour appointed a committee of four persons in New Brunswick to prepare an analysis of the Carpentry Trade. This committee was organized in September 1953 and included Mr. R. J. Atkins, General Contractor in Saint John; Mr. E. A. Fitzgerald, Carpentry Instructor at the Saint John Vocational School; Mr. L. R. Fulton, Carpentry Instructor, Simonds Regional High School, East Saint John; and Mr. J. W. McNutt, Director of Vocational Education, Chairman.

SCOPE OF ANALYSIS

Because the practice of this trade varies province to province, it was decided that the analysis would set forth only those phases of the trade that are considered essential in each and every province. In other words, this would be an analysis reduced to a point such that officials in no province would eliminate any part as being non-essential to the trade. Therefore, it sets forth a body of skills and information common to all sections of Canada. It should be noted that this analysis is not a course of study nor is it intended that operations be undertaken in the sequence shown.

PROCEDURE

This, then, was a starting point and the following steps were taken to make the final result nationally acceptable. As the national committee completed each block, it was sent out to officials in the various provinces for examination. The suggestions were considered and in the light of same the committee reviewed their former efforts and later the revised analysis in one volume was sent out to the Director of Apprenticeship in each province for study by a committee or committees of his choice.

Finally the national committee reviewed the whole effort and have issued the compilation herewith which can be considered the National Analysis of the Carpentry Trade reduced to the minimum content. As such, it gives scope for any province to add features so that their apprentices will be familiar with and skilled in all phases of the trade as practiced in that province.

This analysis comprises a series of Blocks, each of which is a group of related units. Each unit is divided into a number of operations with related knowledge indicated. A code system is used by which Block two, Unit one, Operation eight, and item (a) under Knowledge for example, would be represented by the following, B₂ U₁ O₈ K_a. Such subjects as Mathematics, Science, Blueprint Reading and Safety are included where applicable. Blueprint Reading is intended to include written specifications or other details.

The safety code numbers refer to Bulletin 2903, Code of Construction Safety Measures, issued by the National Research Council, Ottawa. Repetitions of a particular skill or knowledge have been avoided but when necessary have been referred to by code.

PURPOSES AND USES OF ANALYSIS

The committee recommends this analysis as (i) a guide to foreman and others who do training on the job; (ii) a basis for programs in industry and for courses of study in vocational schools, trades institutes or other centres; (iii) a yard stick by which previous experience may be evaluated; (iv) a means of transferring apprenticeship credits from province to province.

It is the sincere hope of the committee that this effort will contribute toward the nation-wide development of Apprenticeship Training and that it will be accepted as a standard of attainment for the granting of completion certificates to apprentices and, also, certificates of qualification to journeymen.

The committee desires to express its appreciation to officials of the Training Branch of the Department of Labour, Ottawa, for their co-operation and guidance in this project. Thanks are also due to the many Advisory Committees and individuals in other provinces who gave freely of their time and experience in submitting comments and suggestions which were of great assistance.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 1: Foundations

UNIT 2: Building Layout

OPERATIONS	KNOWLEDGE
1. Establishing base or building line from street line. (Stakes set by surveyors)	<u>Blueprint Reading to determine location of the building on the lot.</u> (a) Knowledge of building codes. (b) Use of tapes, transit, measuring pole. (c) Temporary stakes for excavation.
2. Locating front corner points from side lot lines.	(a) B1, U2, O1, ka, b.
3. Driving stakes for front corner batter boards.	(a) Working allowance from foundation lines. (b) Use of axe to sharpen stakes. (c) Use of sledge to drive stakes. (d) Methods of constructing batter boards. (e) Methods of holding batter boards on rock.
4. Placing top edges of ledgers from datum.	<u>Blueprint Reading to determine datum</u> (a) Use of carpenter's and/or builder's level. <u>Science - Levels</u>
5. Locating and marking footing and foundation lines on ledgers for front corners.	<u>Blueprint Reading to determine width of building.</u> (a) Methods of marking.
6. Squaring corners from front base or building line.	(a) Use of mason's square (3, 4, 5 or multiples) (b) Use of transit. (c) Use of lines. (d) Special methods.
7. Measuring for length of building on side lines.	<u>Blueprint Reading to determine length of building.</u>
8. Driving stakes for rear corner batter boards.	(a) B1, U2, O3, Ka, b, c, d, e.
9. Placing rear ledgers level with front ledgers.	(a) B1, U2, O4, Ka.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 1: Foundations

UNIT 2: Building Layout

OPERATIONS	KNOWLEDGE
10. Locating and marking footing and foundation lines on ledgers for rear corners.	<u>Blueprint Reading to determine length of building.</u> (a) Methods of marking. (b) B1, U2, O3, Ka.
11. Locating offsets or extensions.	<u>Blueprint Reading to determine location and sizes of offsets.</u>
12. Placing batter boards for offsets.	(a) B1, U2, O3, 4, 5, 6, 7, knowledges included.

NOTE: It is intended that instruction in the care, as well as in the use of each tool will be given throughout.

BLOCK 1: Foundations

UNIT 3: Shoring and Underpinning

OPERATIONS	KNOWLEDGE
1. Placing lagging and walers.	(a) Strength of materials. (b) Nature of soil. (c) Angle of repose. (d) Types of lagging. <u>Safety Precautions Code - 8.5.</u>
2. Placing needles.	(a) Strength of materials. (b) Types of needles. (c) Distance on centres of needles. (d) Methods of fastening needles. (e) Use of jacks. <u>Science - Wedges, Screws, Hydraulics.</u> <u>Safety Precautions Code - 8.5., 8.6.</u>
3. Placing shores.	(a) Features and functions of shores. (b) Strength of materials. (c) Effects of vibration. <u>Science - Angle of stress, Wedges.</u> <u>Safety Precautions Code - 8.5.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction

UNIT 1: Footing Forms

OPERATIONS	KNOWLEDGE
1. Plumbing from intersecting lines on batter boards.	(a) Various methods of locating corners. (b) Plumb-line, straight-edge and level. <u>Science - Levels and plumbs</u>
2. Cutting off and ripping stock.	(a) Use of proper saws; saw fitting. (b) Materials. <u>Safety Precautions Code - 8.6.</u>
3. Fastening with nails and spikes.	(a) Use of hammer. (b) Choice of nails. (c) Proper placing of nails and spikes. <u>Science - Compression, Tension, Friction, Holding power of nails and spikes.</u>
4. Placing spreaders and ties.	<u>Blueprint Reading to determine sizes.</u> (a) Features and functions of various types of spreaders and ties. <u>Science - Tensile strength.</u>
5. Aligning and squaring forms.	(a) Methods.
6. Bracing footing forms.	(a) Features and functions of tying and bracing. <u>Science - Forces</u> <u>Safety Precautions Code - 8.5.</u>
7. Placing keys.	<u>Blueprint Reading to determine types and location.</u> (a) Features and functions of keys. <u>Science - Forces.</u>
8. Constructing special footing forms such as: stepped lot line sloped column.	<u>Blueprint Reading to determine sizes and materials.</u> (a) Features and functions of various types of footings. (b) B2, U1

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction.

UNIT 2: Main Wall Forms.

OPERATIONS	KNOWLEDGE
1. Plumbing from intersecting lines on batter boards.	(a) B2, U1, O1, Ka, b.
2. Placing shoes or soles.	(a) Alignment. (b) Methods of fastening.
3. Erecting studding.	(a) Sizes and spacing of studding. (b) Temporary bracing of studding. <u>Mathematics - Estimating board feet of studding and quantity of nails.</u> <u>Science - Forces and strength of materials.</u> <u>Safety Precautions Code - 8.8.</u>
4. Applying sheathing. (OR)	(a) Materials. (b) B2, U1, O3, Kb, c. (c) Oiling. (d) Cleanouts. <u>Mathematics - Estimating board feet of sheathing.</u>
5. Building sectional panels.	(a) B2, U2, O3, Ka, b. (b) B2, U2, O4, Ka, b, c, d.
6. Placing sectional panels, wood or metal.	<u>Blueprint Reading to determine sizes.</u> (a) Lapping of corners to size. (b) Fastening of lapped corners.
7. Placing opening frames and bucks.	<u>Blueprint Reading to determine sizes and location of frames.</u> (a) Construction of frames and bucks. (b) Bracing.
8. Placing nailing blocks.	<u>Blueprint Reading to determine location.</u> (a) Shaping.
9. Placing walers.	(a) Materials (types and size). <u>Mathematics - Estimating board feet required.</u> <u>Science - Strength of materials.</u> <u>Safety Precautions Code - 8.8.</u>
10. Placing spreaders and ties.	(a) B2, U1, O4, Ka. (b) Necessary reinforcing. <u>Mathematics - Estimating quantity of tying material.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction.

UNIT 2: Main Wall Forms.

OPERATIONS	KNOWLEDGE
11. Placing construction or expansion joints.	(a) Various types. <u>Science - Expansion and contraction.</u>
12. Aligning, squaring and bracing.	(a) Methods of aligning and squaring. (b) Staking and methods of securing bracing. <u>Science - Forces</u> <u>Safety Precautions Code - 8.5.</u>
13. Setting anchor bolts.	<u>Blueprint Reading to determine size and spacing.</u> (a) Functions of anchor bolts. (b) Materials and sizes.
14. Building area way forms.	<u>Blueprint Reading to determine size and location of area way.</u> (a) B2, U2, O3, 4, 9, 10, 12. (knowledges included). <u>Science - Drainage.</u>
15. Building ramps and runs.	(a) Methods. (b) Materials. <u>Science - Stresses</u> <u>Safety Precautions Code - 8.11.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK.2: Concrete Form Construction

UNIT 3: Stair Forms.

OPERATIONS	KNOWLEDGE
1. Locating position of steps	<u>Blueprint Reading to determine location.</u>
2. Laying out stairs.	<u>Blueprint Reading to determine rise and run.</u> (a) Proper elevations. (b) Rise and tread. (c) Foundations. <u>Science - Effects of frost.</u>
3. Erecting side wall sections and soffit forms.	(a) B2, U2, O3, Ka, b. (b) B2, U2, O4, Ka, b, c, d. (c) B2, U2, O8, Ka. (d) B2, U2, O11, Ka. (e) Reinforcing steel. <u>Safety Precautions Code - 8.11.</u>
4. Placing riser forms.	(a) Types of risers. (b) Methods of securing. (c) B2, U2, O11, Ka.
5. Installing nosings.	<u>Blueprint Reading to determine shape.</u> (a) Types of materials. (b) Methods.
6. Providing opening for hand rails.	<u>Blueprint Reading to determine locations.</u> (a) Sizes and materials.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction

UNIT 4: Column, Pier, Beam, Girder and Slab Forms.

OPERATIONS	KNOWLEDGE
1. Locating position of column and/or pier on footing.	<u>Blueprint Reading to determine location and sizes.</u> (a) Building Code Regulations.
2. Establishing height of column or pier.	<u>Blueprint Reading to determine height</u> (a) Level from base line. <u>Science - Levels.</u>
3. Building side panels to width and height.	(a) Materials. (b) Spacing of cross ties or yokes. (c) Cut out for beam or girder forms. (d) Oiling. <u>Science - Stresses.</u>
4. Placing corner chamfer or moulds.	<u>Blueprint Reading to determine shape.</u> (a) Mitering and coping mouldings. (b) Metal protective corners.
5. Assembling and aligning forms. (Including manufactured forms for columns)	(a) Reinforcing. (b) Methods of tying at corners. (c) Methods of aligning and bracing. (d) Cleanouts. (e) Column stubs. <u>Science - Stresses.</u> <u>Safety Precautions Code - 8.8.</u>
6. Building side and soffit panels, and side panels for slab.	(a) B2, U ⁴ , O3, Ka, b. (b) B2, U ⁴ , O ⁴ , Ka, b. <u>Science - Stresses.</u>
7. Placing corner chamfer or moulds.	<u>Blueprint Reading to determine shape.</u> (a) B2, U ⁴ , O ⁴ , Ka.
8. Setting up jacks.	(a) Types of jacks. (b) Levelling and aligning. (c) Bracing. <u>Science - Stresses, screw-pitch, hydraulics.</u> <u>Safety Precautions Code - 8.6.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction.

UNIT 4: Column, Pier, Beam, Girder
and Slab Forms.

OPERATIONS	KNOWLEDGE
9. Assembling and aligning forms.	(a) B2, U4, O5, Ka, b, c, d, e. <u>Science - Stresses.</u> <u>Safety Precautions Code - 8.8.</u>
10. Placing ledgers and form joists.	<u>Blueprint Reading to determine thickness of slab to ascertain size of supporting members.</u> (a) Allowances for thickness of materials. (b) Types and strength of materials. (c) Methods of securing.
11. Placing jacks and/or under pinning.	(a) B2, U4, O8, Ka, b, c. <u>Safety Precautions Code - 8.6.</u>
12. Placing slab soffit form.	(a) B2, U2, O4, Ka, b, c. (b) Reinforcing. <u>Safety Precautions Code - 8.5.</u>
13. Placing corner chamfers or moulds on slab.	<u>Blueprint Reading to determine shape.</u> (a) B2, U4, O4, Ka.
14. Installing screeds.	<u>Blueprint Reading to determine thickness of slab and shape.</u> (a) Types of screeds. (b) Methods of setting. (c) Method of pouring. <u>Science - Levels, expansion and contraction.</u>
15. Installing hangers if required.	<u>Blueprint Reading to determine locations and types.</u>
16. Providing openings for heating and plumbing.	<u>Blueprint Reading to determine sizes and location.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 2: Concrete Form Construction

UNIT 5: Stripping.

OPERATIONS	KNOWLEDGE
1. Releasing ties.	(a) B2, U1, O4, Ka.
2. Removing ties.	(a) B2, U1, O4, Ka. <u>Safety Precautions Code - 8.13.</u>
3. Removing braces, whalers and jack studs.	(a) B2, U2, O9 to 12. (Knowledges included)
4. Removing sheathing and opening bucks.	(a) Care of surface and corners. <u>Safety Precautions Code - 8.13.</u>
5. Removing nails and cleaning lumber.	<u>Safety Precautions Code - 8.13.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 1: Sills.

OPERATIONS	KNOWLEDGE
1. Checking foundation wall for truth.	<u>Blueprint Reading to determine sizes.</u> (a) Use of masons square (3, 4, 5, or multiples). (b) Use of tapes to check diagonals. (c) Use of level and straightedge.
2. Cutting stock to length and framing ends.	<u>Blueprint Reading to determine sizes and materials.</u> (a) Types of sills. (b) Position of sill plate. (c) Location of joints. (d) Features and functions of various types of sills. (e) Use of steel square.
3. Laying out and marking anchor bolt centres.	(a) Layout from base line.
4. Boring holes in sill plate.	(a) Use of boring tools. (b) Tolerance.
5. Placing, aligning and levelling sill plates.	(a) Use of shims and grout. (b) Termite protection. (c) Back painting, sealing and preservatives. (d) Use of chalk lines.
6. Placing washers and tightening nuts.	(a) Alignment of sill plate. (b) Degree of tension.

BLOCK 3: Framing.

UNIT 2: Columns and/or Posts.

OPERATIONS	KNOWLEDGE
1. Checking locations and height.	<u>Blueprint Reading to determine location and height.</u> (a) Allowance for bearing plates and/or bolsters if used.
2. Placing columns and posts.	(a) Types of columns and posts. (b) Anchoring of columns or posts. (c) Alignment. (d) Preservatives. (e) B3, U3, O2, Ka, b, c.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 3: Girders.

OPERATIONS	KNOWLEDGE
1. Checking girder pockets for size and location.	<u>Blueprint Reading to determine size and location.</u>
2. Selecting girder stock.	(a) Strength of materials. (b) Structural defects in stock. (c) Selection. (d) Type of materials.
3. Cutting stock to length and framing joints.	(a) Types of girders. (b) Types of joints. (c) Positioning of joints on columns. (d) Span limits. (e) Rot prevention in pockets. (f) Ventilation of pockets.
4. Assembling built-up type girder.	(a) Methods of nailing. (b) Location of joints. <u>Science - Holding power of nails.</u>
5. Placing temporary supports.	(a) Bracing. <u>Safety Precautions Code - 8.5.</u>
6. Placing girders.	(a) Elevation of top of girder. (b) Alignment of girders. (c) Crowning of girders. (d) Bearing plates. (e) Bolsters. (f) Fastening of joints. (g) Shrinkage allowance. (h) Bevel end cut on girder.
7. Placing steel girders.	(a) B3, U3, O6, Ka, b, c. (b) B3, U3, O3, Kd. (c) Rust prevention. (d) Methods of fastening.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 4: Joists, Bridging and Flooring.

OPERATIONS	KNOWLEDGE
1. Laying out joist spacing.	<u>Blueprint Reading to determine spacing.</u> (a) Methods of layout.
2. Placing double or triple joists.	<u>Blueprint Reading to determine need.</u>
3. Selecting joist stock.	(a) B3, U3, O2, Ka, b, c, d. (b) Difference in sizes of ceiling and floor joists.
4. Cutting stock to length.	(a) Bearing area on girder. (b) Amount of lap permitted.
5. Placing joist.	(a) Crowning. (b) Sizing for width. (c) Framing ends of joist for sill and girder connection. (d) Aligning. (e) Nailing. <u>Science - Shrinkage</u>
6. Framing floor openings.	<u>Blueprint Reading to determine size and location.</u> (a) Building code regulations. (b) Joist hangers or stirrups. (c) Trimmers, headers, and tail joists. (d) Blocking for sub-floor opposite exterior door openings. (e) Determining sizes of openings from flue size.
7. Installing bridging.	(a) Features and functions of bridging. (b) Types of materials. (c) Methods of cutting. (d) Nailing top ends. (e) Time to nail bottom ends. <u>Science - Bracing effect.</u>
8. Selecting sub-flooring stock.	(a) Types of materials.
9. Placing sub-flooring.	(a) Butt on joist. (b) Type and quantity of nails. (c) Angle of placement. (d) Margin opposite exterior door openings. (e) Power saw for trimming. <u>Science - Shrinkage.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 5: Platform Frame.

OPERATIONS	KNOWLEDGE
1. Placing exterior and bearing partition shoes or soles.	<u>Blueprint Reading to determine location.</u> (a) Alignment. (b) Nailing. (c) Paper seal under shoe.
2. Selecting stock and cutting plates.	(a) Materials. (b) Butting on studs. (c) Select plate stock for straightness.
3. Marking stud spacing on shoe and plate.	(a) Use of steel square. (b) Use of spacing or layout rod for large buildings. (c) Types of corners.
4. Locating window and door openings on shoe and plate.	<u>Blueprint Reading to determine size and location.</u> (a) Use of steel square. (b) Determining width of openings.
5. Selecting and cutting studs to length	<u>Blueprint Reading to determine ceiling height.</u> (a) Power saw. (b) Use of cutting "jig". <u>Safety Precautions Code - 8.6.</u>
6. Cutting window opening members.	<u>Blueprint Reading to determine dimensions.</u> (a) Bottom cripple studs. (b) Determining width and height of window openings from glass sizes. (c) Sills and lintels. (d) Window jack studs. (e) Top cripple studs. (f) Alignment of window sills. (g) B3, U5, O5, Ka, b. (h) Tolerance for setting frames. (i) Trussing over windows.
7. Cutting door opening members.	<u>Blueprint Reading to determine dimensions.</u> (a) Determining width and height of door openings from finished door sizes. (b) Door jack studs. (c) Door lintels. (d) Top cripple studs. (e) B3, U5, O5, Ka, b. (f) Tolerance for setting frames. (g) Importance of alignment to prevent wind.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 5: Platform Frame.

OPERATIONS	KNOWLEDGE
8. Assembling frame (1) as unit and raise <u>or</u> (2) piece by piece	(a) Erection methods. (b) Nailing. (c) Assembly "jigs". (d) Temporary bracing. (e) Trussing openings. (f) Permanent bracing. (g) Aligning and bracing.
9. Cutting and placing double plate.	(a) Features and functions of double plates. (b) Staggering of plate joints and lapped corners.
10. Placing ceiling strapping or furring.	<u>Blueprint Reading to determine sizes and spacing.</u> (a) Material sizes. (b) Spacing. (c) Butting on joist. (d) Aligning (shimming).

Repeat Block 3, Units 4 and 5 for additional stories, and/or add ceiling joists.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 6: Non-bearing Partitions.

OPERATIONS	KNOWLEDGE
1. Locating and marking location of non-bearing partitions on sub-floor.	<u>Blueprint Reading to determine location and size.</u> (a) Use of chalk line, measuring pole and tape.
2. Selecting and cutting shoes and plates.	(a) Materials. (b) Straight Stock required. (c) Single plates. (d) Double plates tied into exterior wall in platform frame and forming of ceiling angle. (e) Cut shoe at door opening before nailing.
3. Locating and marking position of partition on ceiling.	(a) Methods of plumbing.
4. Locating and marking openings.	<u>Blueprint Reading to determine location and size.</u> (a) Types of openings. (b) Layout of arches if required. (c) Trussing.
5. Cutting studs to length.	<u>Blueprint Reading to determine ceiling height.</u> (a) B3, U5, O5, Ka, b. (b) Use of sliding poles.
6. Assembling and raising partitions.	(a) Methods. (b) Aligning, nailing. (c) Methods of straightening. (d) Double partitions for sliding doors.
7. Placing nailing blocks for interior trim.	(a) Door openings. (b) Intersections. (c) Bracing blocks. (d) Use of short stock to avoid waste. (e) Backing for lath. (f) Fire stops.
8. Placing plaster grounds.	<u>Blueprint Reading to determine size and location.</u> (a) Features and functions of grounds. (b) Methods of straightening.
9. Framing for various pipe chases, ducts, etc.	<u>Blueprint Reading to determine size and location.</u> (a) Knowledge of other trades (plumbing, heating, electrical). <u>Mathematics (apply to Block #3 to estimate quantity of lumber).</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 3: Framing.

UNIT 7: Pre-fabricated Walls, Panels

OPERATIONS	KNOWLEDGE
1. Installing floor platform.	(a) B3, Units 1, 2, 3, and 4. (Knowledges included)
2. Selecting panels.	<u>Blueprint Reading to determine selection.</u>
3. Erecting panels.	(a) Aligning and bracing. (b) Methods of fastening. (c) Caution in handling. <u>Safety Precautions Code - 8.8.</u>
4. Erecting interior partition panels.	(a) B3, U7, O3, Ka, b, c.
5. Placing ceiling strapping or furring.	<u>Blueprint Reading to determine sizes and spacing.</u> (a) B3, U5, O10, Ka, b, c, d.

Repeat Block #3, Unit 7 Operations as applicable to additional stories and/or ceiling joist or roof trusses.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 4: Boarding, Sheathing and Scaffolding.

UNIT 1: Horizontal Boarding or Sheathing.

OPERATIONS	KNOWLEDGE
1. Checking framed wall for truth.	<u>Science - Level, plumb.</u>
2. Sorting stock for widths.	
3. Selecting straight stock for starting board.	(a) Materials.
4. Applying and levelling starting board.	(a) Types of nails. (b) Methods of nailing. (c) Butting on studs. (d) Breaking joints. (e) Correct cutting at openings to suit frames. (f) Accurate cutting at exterior corners.
5. Applying roof sheathing.	(a) Proper position of starting board. (b) Angle cuts for hips and valleys. (c) Chimney crickets. (d) B ₄ , U ₁ , O ₄ , K _a , b, c, d.

BLOCK 4: Boarding, Sheathing and Scaffolding.

UNIT 2: Diagonal Boarding or Sheathing.

OPERATIONS	KNOWLEDGE
1. Applying sheathing diagonally.	(a) Horizontal draft stop at sill plate line. (b) B ₄ , U ₁ , O ₄ , K _a , b, c, d, e, f. <u>Science - Bracing effect and comparative strength of green and seasoned lumber.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 4: Boarding, Sheathing and Scaffolding.

UNIT 3: Patented Wall Board Sheathing.

OPERATIONS	KNOWLEDGE
1. Applying patented wall board sheathing.	(a) B4, U1, O1. (b) Types of wall boards. (c) Holding power of nails. (d) Choice of nails. (e) Nailing from centre of sheets. (f) Blocking back of edges. (g) Breathing qualities of wall boards. (h) Insulating qualities. (i) Joint treatment. <u>Science - Bracing effect.</u>

BLOCK 4: Boarding, Sheathing and Scaffolding.

UNIT 4: Scaffolding.

OPERATIONS	KNOWLEDGE
1. Selecting stock.	(a) Materials. (b) Strength.
2. Erecting scaffolding.	(a) <u>Safety Precautions Code - 8.8.</u> (b) Single pole. (c) Double pole. (d) Tubular staging. (e) Push brackets. (f) Steel brackets. (g) Ladder jacks. (h) Stirrup type. (i) Adjustable roof brackets. (j) Trestles.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction.

UNIT 1: Gable Roof.

OPERATIONS	KNOWLEDGE
1. Selecting rafter stock.	<u>Blueprint Reading to determine materials and sizes.</u>
2. Selecting and framing ridge pole	(a) Quality of materials. (b) Methods and position of splice. (c) Length of ridge.
3. Laying out rafter spacing on plates and ridge pole.	<u>Blueprint Reading to determine spacing.</u> (a) Measuring tools.
4. Laying out common rafter pattern and cutting rafters.	<u>Blueprint Reading to determine pitch and overhang.</u> (a) Steel square. (b) Methods of determining lengths and cuts. (c) Deduction for thickness of materials. (d) Use of hand saw, and/or power hand saw, and/or radial saw. Angle cutting and determining degrees to correspond with pitch. (e) Crowning. <u>Mathematics - Right angle triangle, degrees.</u> <u>Safety Precautions Code - 8.6.</u>
5. Raising ridge pole.	(a) Temporary supports and bracing. (b) Staging. <u>Safety Precautions Code - 8.8.</u>
6. Placing common rafters.	(a) Methods of nailing. (b) Importance of securing rafter to plate. (c) Temporary bracing. (d) Patented fasteners. <u>Safety Precautions Code - 8.8.</u>
7. Cutting and placing collar beams.	<u>Blueprint Reading to determine size and location.</u> (a) Features and functions. (b) Importance of firmly securing ends. (c) Construction rings. (d) Types of prefabricated light trusses. <u>Safety Precautions Code - 8.8.</u>
8. Framing roof openings.	<u>Blueprint Reading to determine size and location.</u> <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction.

UNIT 1: Gable Roof.

OPERATIONS	KNOWLEDGE
9. Framing snub gable.	<u>Blueprint Reading to determine size.</u> (a) Major and minor span. (b) Framing of hip rafters. (c) Shortened common rafter. <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction.

UNIT 2: Hip and Valley Roof.

OPERATIONS	KNOWLEDGE
1. Placing ridge pole and common rafters.	(a) B5, U1.
2. Laying out length and cuts of hip and/or valley rafters.	<u>Blueprint Reading to determine construction.</u> (a) Steel square. (b) Methods. (c) Backing or dropping of hip or valley. (d) Compound angle cutting, use of hand saw, and/or hand power saw, and/or radial saw. Compound cutting and determining degrees to correspond with pitch. (e) Deduction of 45° thickness. (f) Crowning. <u>Mathematics - Ratio of length of hip to common rafter. Right angle triangle and degrees.</u> <u>Safety Precautions Code - 8.6.</u>
3. Placing hip rafters and/or valley rafters.	(a) B5, U1, O6, Ka, b, c, d.
4. Laying out lengths and cuts of 1st jack rafters.	(a) B6, U2, O2, Kd, f. (b) Methods of layout. (c) Difference in length of other jacks equally spaced.
5. Placing jack rafters.	(a) B5, U1, O6, Ka, b, c, d. <u>Safety Precautions Code - 8.8.</u>
6. Laying out, cutting and placing cripple rafters.	(a) B5, U2, O2, Kd, f. (b) Methods of layout. (c) Difference in length of other cripple jacks equally spaced. <u>Safety Precautions Code - 8.8.</u>
7. Laying out, cutting and placing hip valley jacks.	(a) Methods of layout. (b) B5, U2, O2, Kd, f. (c) B5, U1, O6, Ka, b, c. <u>Safety Precautions Code - 8.8.</u>

NOTE: Intersecting roof has ridge board and common rafter layouts similar to previous units.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction

UNIT 3: Gambrel Roof.

OPERATIONS	KNOWLEDGE
1. Selecting rafter stock.	<u>Blueprint Reading to determine sizes.</u>
2. Selecting and framing ridge pole and upper plates.	(a) B5, U1, O2, Ka, b, c.
3. Laying out rafter spacing on plates and ridge pole.	<u>Blueprint Reading to determine spacing.</u> <u>Safety Precautions Code - 8.10.</u>
4. Laying out major and minor rafter patterns and cutting rafters.	<u>Blueprint Reading to determine pitch and overhang.</u> (a) B5, U1, O4, Ka, b, c, d, e. (b) Methods of framing major and minor rafters (proportion of height of roof to width of building). (c) Methods of trussing. (d) Fastening with bolts and construction rings. (e) Manufactured or pre-fabricated laminated trusses. <u>Mathematics - right-angle triangle.</u> <u>Safety Precautions Code - 8.6.</u>
5. Raising upper plates.	(a) B5, U1, O6, Ka, b, c. <u>Safety Precautions Code - 8.8.</u>
6. Placing major rafters.	(a) B5, U1, O6, Ka, b, c. <u>Safety Precautions Code - 8.8.</u>
7. Raising ridge pole.	(a) B5, U1, O6, Ka, b, c. <u>Safety Precautions - Code - 8.8.</u>
8. Cutting and placing collar beams.	<u>Blueprint Reading to determine size and location.</u> (a) B5, U1, O7, Ka, b, c, d.
9. Framing roof openings.	<u>Blueprint Reading to determine size and location.</u>
10. Framing and placing cornice lookouts.	<u>Blueprint Reading to determine size and shape.</u> (a) Steel square. (b) Use of band saw. <u>Safety Precautions Code - 8.6. and 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction

UNIT 4: Mansard Roof

OPERATIONS	KNOWLEDGE
1. Selecting rafter stock.	<u>Blueprint Reading to determine materials and sizes.</u>
2. Selecting and framing upper plates.	(a) B5, U1, O2, Ka, b, c.
3. Laying out rafter spacing on plates.	<u>Blueprint Reading to determine spacing.</u>
4. Laying out, cutting and placing mansard rafters.	<u>Blueprint Reading to determine spacing and shape.</u> (a) B5, U1, O4, Ka, b, c, d, e. (b) Curved Rafters. (c) Use of bandsaw. (d) Development of hip curve from common curve. <u>Safety Precautions Code - 8.6. and 8.8.</u>
5. Laying out, cutting and placing deck rafters.	(a) B5, U1, O4, Ka, b, c, d, e. (b) Cambered rafters. <u>Safety Precautions Code - 8.6. and 8.8.</u>
6. Framing window and door openings.	<u>Blueprint Reading to determine size and location.</u> <u>Safety Precautions Code - 8.8.</u>
7. Framing and placing cornice lookouts.	<u>Blueprint Reading to determine size and shape.</u> (a) B5, U3, O10, Ka, b. <u>Safety Precautions Code - 8.6. and 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction

UNIT 5: Flat Roof.

OPERATIONS	KNOWLEDGE
1. Selecting rafter stock.	<u>Blueprint Reading to determine materials and sizes.</u>
2. Framing and placing strong backs and/or dwarf partitions graded to roof drain.	<u>Blueprint Reading to determine pitches and position of roof drain.</u> (a) Adequate supports. (b) Recommended grades. (c) Building code. <u>Science - Strength of materials.</u> <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>
3. Laying out rafter spacing on strong backs and plates.	<u>Blueprint Reading to determine spacing.</u>
4. Framing and placing rafters.	(a) B5, U1, O4, Ka, b, d, e. (b) Methods of fastening. (c) Furring of overhangs to align cornice. (d) Lookouts. <u>Science - Levels.</u> <u>Safety Precautions Code 8.6. and 8.8.</u>
5. Framing roof openings.	<u>Blueprint Reading to determine size and location.</u>

NOTE: For other types of flat roofs, use similar operations and knowledges as for Block 5, Unit 5.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction

UNIT 6: Unequal Pitch-Roof.

OPERATIONS	KNOWLEDGE
1. Selecting rafter stock.	<u>Blueprint Reading to determine materials and sizes.</u>
2. Selecting and framing the ridge poles.	(a) B5, U1, O2, Ka, b, c.
3. Laying out rafter spacing on plates and ridge poles.	<u>Blueprint Reading to determine spacing.</u> (a) Measuring tools.
4. Laying out common rafter patterns and cutting rafters.	<u>Blueprint Reading to determine pitch.</u> (a) B5, U1, O4, Ka, b, c, d, e. (b) Raising of plates to align cornices. <u>Mathematics - Right-angle triangle.</u> <u>Safety Precautions Code - 8.6.</u>
5. Raising ridge poles.	(a) B5, U1, O5, Ka, b. <u>Safety Precautions Code - 8.8. and 8.10.</u>
6. Placing common rafters.	(a) B5, U1, O6, Ka, b, c, d. <u>Safety Precautions Code - 8.8. and 8.10.</u>
7. Laying out, cutting and placing intersecting valley rafters.	(a) Steel square (methods). (b) Supporting valley rafter. (c) Position of seat of valley rafter on plate. (d) Dropping or backing. (e) Compound angle cutting. (f) Deduction for thickness of materials. (g) Crowning. <u>Safety Precautions Code 8.6., 8.8. and 8.10.</u>
8. Laying out, cutting and placing jack rafters.	(a) Steel square (methods). (b) B5, U2, O4, Ka, b, c.. <u>Mathematics - Degrees.</u> <u>Safety Precautions Code - 8.6. and 8.8.</u>
9. Cutting and placing collar beams.	(a) B5, U1, O7, Ka, b, c, d, e.
10. Framing roof openings.	<u>Blueprint Reading to determine size and location</u> <u>Safety Precautions Code - 8.6. and 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 5: Roof Construction

UNIT 7: Dormers.

OPERATIONS	KNOWLEDGE
1. Framing gable type dormer.	<u>Blueprint Reading to determine size, location and pitch.</u> (a) B5, U1, O4, Ka, b, c, d, e. (b) Valley formed on top of roof boards. (c) B5, U2, O6, Ka, b, c. <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>
2. Framing hip type dormer.	<u>Blueprint Reading to determine size, location and pitch.</u> (a) B5, U2, O2, Ka, b, c, d, e, f. (b) Curved hip rafter type. (c) B5, U2, O6, Ka, b, c. <u>Mathematics - Ratio of length of hip to common rafter. Degrees.</u> <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>
3. Framing dustpan type dormer.	<u>Blueprint Reading to determine size, location and pitch.</u> (a) B5, U1, O4, Ka, b, c, d, e. (b) Angle cut of dustpan rafter on roof. <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>
4. Framing eyebrow type dormer.	<u>Blueprint Reading to determine size, location and pitch.</u> (a) Layout of curved rafters for eyebrows. (b) Diminishing curved jacks. (c) Use of bandsaw. <u>Mathematics - Circles.</u> <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>
5. Framing segmental roof type dormer.	<u>Blueprint Reading to determine size, location and pitch.</u> (a) Layout of common curved rafters. (b) Diminishing curved jacks. (c) Use of bandsaw. <u>Safety Precautions Code - 8.6., 8.8. and 8.10.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 1: Cornices.

OPERATIONS	KNOWLEDGE
1. Checking overhang for truth.	<u>Blueprint Reading to determine sizes.</u> (a) Straightening with line and block. (b) Use of level and square.
2. Cutting and applying soffit furring for closed cornice.	(a) Alignment of soffit furring.
3. Framing returns.	<u>Blueprint Reading to determine type and size of return.</u> (a) Methods of returning cornice including snub-cornice. (b) Length of return for proper proportion.
4. Applying soffit or plancier.	(a) Types of materials. (b) Back painting. (c) Ventilation. (d) Mitering (e) Use of jack and butt planes, mitre square and chisel. (f) Types of fasteners. <u>Mathematics - Lineal Measurements</u>
5. Applying fascia.	(a) B6, U1, O4, Ka, b, d. e.
6. Applying crown mould.	(a) Bevel for slope of roof. (b) Use of miter box. (c) B6, U1, O4, Ka, b, e. (d) Development of raking moulding. (e) Covering of return.
7. Applying frieze.	<u>Blueprint Reading to determine size.</u> (a) Types of materials. (b) Alignment. (c) Rabbet or bevel for wall covering. (d) B6, U1, O4, Kb, d, f. (e) Furring out from wall. (f) Use as header for window and door frames. (g) Building paper underlay (breather type).
8. Applying cove or bed moulding.	(a) B6, U1, O4, Ka, b, d, f. (b) Dentils, medallions, brackets. (c) Belt moulding.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 1: Cornices

OPERATIONS	KNOWLEDGE
9. Installing gutters.	<ul style="list-style-type: none"> (a) Types and materials. (b) Methods of attaching. (c) Methods of splicing. (d) Downspout connections. (e) Back painting. (f) Fastening. (g) Breather space. (h) Methods of placing downspouts.
10. Cutting and placing rafter tails on open cornice.	<p>Blueprint Reading to determine shape and size.</p> <ul style="list-style-type: none"> (a) B6, U1, O4, Ka, b, d, f. (b) Spacing. (c) Methods of attaching and aligning. (d) Use of hand and/or power saws and bandsaws.
11. Placing draft stops.	<ul style="list-style-type: none"> (a) B6, U1, O4, Ka, b, c, d, f. (b) Close tolerance on fitting. (c) Frieze and/or bed moulding.
12. Attaching cornice ceiling.	<ul style="list-style-type: none"> (a) Materials and types. (b) Care in fastening roofing.
13. Placing gable ceiling.	<ul style="list-style-type: none"> (a) Materials and types. (b) Staggering joints.
14. Placing gable brackets or exposed gable rafter.	<ul style="list-style-type: none"> (a) B6, U1, O10, Ka, b, c, d. (b) Methods of applying frieze and bed moulding. (c) Barge or verge board. (d) Miterring.

NOTE: Safety Precautions Code - 8.8. apply Throughout This Block.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish

UNIT 2: Roof Coverings

OPERATIONS	KNOWLEDGE
1. Checking roof boarding for defects.	(a) Types of defects. (b) Methods of correction. <u>Safety Precautions Code - 8.8.</u>
2. Applying paper underlay for asphalt shingles.	(a) Type of felt. (b) Methods of applying. (c) Lapping. (d) Condensation control. (e) Coverage of underlay. <u>Mathematics - Areas</u> <u>Safety Precautions Code - 8.8.</u>
3. Applying starter strip.	(a) Overhang and aligning. (b) Underlay course of cedar shingles. (c) Apron flashing to prevent ice formation at eaves. (d) Proper size and spacing of nails or staples. (e) Use of stapling hammer. (f) Rust resistant fasteners. <u>Safety Precautions Code - 8.8.</u>
4. Applying asphalt shingles.	(a) Types and weights and coverage. (b) Lining and spacing using manufacturers specifications. (c) Sealing of butts. (d) Care of surface. (e) Matching of colors. (f) Types of roof scaffolding. (g) Methods of flashing and shingling valleys (sealing). (h) Shingling of hips and saddles. <u>Safety Precautions Code - 8.8.</u>
5. Placing flashings.	(a) Types of materials. (b) Treatment of chimneys and vertical walls. (c) Lapping and nailing. (d) Securing of lead or copper over flashings. (e) Flashing of chimney crickets. (f) Use of cant board. <u>Science - Electrolysis</u> <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish

UNIT 2: Roof Coverings.

OPERATIONS	KNOWLEDGE
6. Applying roll roofing.	(a) B6, U2, 01 and 2. (b) Sizes, types and weights. (c) Preparation for expansion. (d) B6, U2, 03, Kd, e. (e) B6, U2, 04, Kd, e, f. (f) Finishing hips and saddles. <u>Safety Precautions Code - 8.8.</u>
7. Placing flashing.	(a) B6, U2, 05, Ka, b, c, d, e, f.
8. Applying wood shingle roof.	(a) Material and grades and coverage. (b) Ventilation. (c) Double breaking. (d) Shingle exposure and nailing. (e) Use of shingle hatchet. (f) Types of rust resistant nails. (g) Shingling of hip. Boston and/or interwoven. (h) Saddle boards. (i) Flashing open and closed valleys. (j) Preservatives for wood. (k) Types of roof scaffolding. (l) Allowance for expansion. <u>Safety Precautions Code - 8.8.</u>
9. Placing flashing.	(a) B6, U2, 05, Ka, b, c, d, e.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish

UNIT 3: Window and Door Frames

OPERATIONS	KNOWLEDGE
1. Checking opening for truth.	<u>Blueprint Reading to determine size.</u>
2. Placing marginal underlay.	<ul style="list-style-type: none"> (a) Features and functions. (b) Materials. (c) Correct methods of lapping underlay. (d) Breather felts.
3. Setting window frames.	<ul style="list-style-type: none"> (a) Types. (b) Back painting. (c) Add flashing strips to back of casing. (d) Plumbing and aligning. (e) Nailing (slope). (f) Wedging of window sills. (g) Rust resistant nails. (h) Temporary protection of window frames from damage, including temporary spreaders between jambs. (i) Assembly of window frames. (j) Draft proofing. <u>Safety Precautions Code - 8.8.</u>
4. Setting exterior door frames.	<ul style="list-style-type: none"> (a) B6, U3, O3, Ka, b, c, d, e, g. (b) Temporary protection of door frames and sills from damage. (c) Height of door sill above rough floors. (d) Wedging of door sills and jambs. (e) Blocking behind hinges. (f) Assembly of door frames. (g) Draft proofing. <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish

UNIT 4: Corner Boards, Water Tables,
Belt Courses and Half
Timber Work

OPERATIONS	KNOWLEDGE
1. Checking corners for truth.	
2. Placing underlay.	(a) B6, U3, O2, Ka, b, c, d.
3. Selecting stock.	(a) Materials, sizes and grades. (b) Back painting.
4. Placing corner boards.	(a) Bevelled end joint (direction of bevel). (b) Aligning. (c) B6, U3, O3, K, c, e, g. (d) Types of joints on overlap. (e) Staggering of joints (end). (f) Treatment of top of corner boards. <u>Safety Precautions Code - 8.8.</u>
5. Placing paper underlay for water table.	(a) B6, U3, O2, Ka, b, c, d.
6. Placing water table.	<u>Blueprint Reading to determine size.</u> (a) Materials and sizes. (b) Aligning. (c) B6, U3, O3, Kb, e, g. (d) Miterring.
7. Placing water table cap.	<u>Blueprint Reading to determine sizes.</u> (a) Materials and sizes. (b) Flashing. (c) B6, U3, O3, Kb, e, g. (d) Miterring and coping.
8. Placing paper underlay for belt course.	(a) B6, U3, O2, Ka, b, c, d.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish

UNIT 4: Corner Boards, Water Tables,
Belt Courses and Half
Timber Work

OPERATIONS	KNOWLEDGE
9. Placing belt course.	<u>Blueprint Reading to determine size and location.</u> (a) Materials and sizes. (b) Aligning. (c) B6, U3, O3, Kb, e, g. (d) Miterring. (e) Furring or backing. (f) Rabbet or bevel back to receive wall finish. (g) Flashing. <u>Safety Precautions Code - 8.8.</u>
10. Placing paper underlay for half timber work (false).	(a) B6, U3, O2, Ka, b, c, d.
11. Laying out panels.	<u>Blueprint Reading to determine sizes and locations.</u> (a) Lining.
12. Placing half timber members.	(a) Materials and sizes. (b) B6, U3, O3, Kb, e, g. (c) Miterring. (d) Flashing. (e) Chambering or bevelling. (f) Rabbeting. (g) Use of band saw. <u>Safety Precautions Code - 8.6. and 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 5: Wall Coverings.

OPERATIONS	KNOWLEDGE
1. Applying paper underlay for wall covering.	<ul style="list-style-type: none"> (a) Breather felts for wood coverings. (b) Asphalt felts for asbestos, shingles and insulated sidings. (c) Lapping.
2. Flashing door and window frame heads.	<ul style="list-style-type: none"> (a) Materials. (b) Methods.
3. Applying wood shingles.	<p><u>Blueprint Reading to determine grades and spacing.</u></p> <ul style="list-style-type: none"> (a) Types and grades. (b) Starter courses. (c) Spacing of courses. (d) Breaking joints. (e) Preservatives. (f) Lining or using straight edge. (g) Types of nails. (h) Nailing. (i) Fitting into shingle rabbet or groove. (j) Treatment of interior and exterior corners. (k) Exposure. <p><u>Safety Precautions Code - 8.8.</u></p>
4. Applying wood clapboards, novelty siding and/or plywood and tempered prestwood clapboards.	<p><u>Blueprint Reading to determine materials and exposure.</u></p> <ul style="list-style-type: none"> (a) B6, U5, O3, Ka, b, c, d, e, f, g, h, i, j, k. (b) Furring of bottom edge of plywood and tempered prestwood clapboards. (c) Treatment of edges and joints of plywood (preservatives). (d) Coverage. <p><u>Safety Precautions Code - 8.6. and 8.8.</u></p>
5. Applying plywood panels.	<p><u>Blueprint Reading to determine materials.</u></p> <ul style="list-style-type: none"> (a) B6, U5, O3, Ka, e, f, g, h, i, j. (b) Treatment of edges and joints of plywood (preservatives). (c) Battens. (d) Use of table saw, and/or power hand saw. <p><u>Safety Precautions Code - 8.6. and 8.8.</u></p>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 5: Wall Coverings.

OPERATIONS	KNOWLEDGE
6. Applying vertical wood sheathing.	<u>Blueprint Reading to determine materials and sizes.</u> (a) Types, materials and coverage. (b) Type of edge joints. (c) Battens. (d) B6, U5, O3, Ke, g, h, i, j. <u>Safety Precautions Code - 8.8.</u>
7. Applying asbestos shingles.	<u>Blueprint Reading to determine types and colours.</u> (a) Types, colors and coverage. (b) Backing felts. (c) Special nails. (d) Care in handling and nailing. (e) B6, U5, O3, Kc, d, f, i, j. (f) Shingle cutters. <u>Safety Precautions Code - 8.8.</u>
8. Applying insulated siding.	<u>Blueprint Reading to determine materials and sizes.</u> (a) Types, materials and coverage. (b) Strapping for ventilation. (c) Siding cutters. (d) B6, U5, O3, Kc, d, f, g, h, i, j. <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 6: Verandah or Open Porch Finish.

OPERATIONS	KNOWLEDGE
1. Applying felt strips to top of joists.	(a) Preservative treatment. (b) Flashing.
2. Applying floor.	<u>Blueprint Reading to determine materials and sizes.</u> (a) Types of materials. (b) Open and closed. (c) Incline from building. (d) Preservatives. (e) Types of nails.
3. Placing water table.	(a) B6, U4.
4. Placing wood columns.	<u>Blueprint Reading to determine size and location.</u> (a) Types of columns. (b) Ventilation. (c) Placing of pedestals when required. (d) Preservatives. (e) Half columns. (f) Scribing of base to floor. <u>Safety Precautions Code - 8.8.</u>
5. Placing top and bottom rails.	<u>Blueprint Reading to determine sizes, type and locations.</u> (a) Watershedding types of rails. (b) Blocking under bottom rail. (c) Back painting. (d) Fitting rail to columns. (e) Nailing and draw bolts.
6. Placing balusters.	<u>Blueprint Reading to determine size and spacing.</u> (a) Types. (b) Spacing. (c) Use of dividers. (d) Back painting. (e) Nailing. (f) Fitting to top and bottom rails.
7. Placing cornice.	(a) B6, U1. <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 6: Exterior Finish.

UNIT 6: Verandah or Open Porch Finish.

OPERATIONS	KNOWLEDGE
8. Placing wood steps.	<u>Blueprint Reading to determine sizes.</u> (a) Materials. (b) Layout of stringers (Ratio of rise to run per step). (c) Precautions against frost action. (d) Preservatives. (e) Open and closed risers. (f) Open and solid treads. (g) Finishing ends of treads. (h) Mitering of risers to string board. (i) Buttress type rail.
9. Placing newel posts.	<u>Blueprint Reading to determine size and location.</u> (a) Types. (b) Anchoring of posts.
10. Placing top and bottom rails.	<u>Blueprint Reading to determine size and location.</u> (a) B6, U6, O4, Ka, b, c, d, e. (b) Bevel cuts. (c) Use of sliding T-bevel.
11. Placing balusters.	<u>Blueprint Reading to determine size and spacing.</u> (a) B6, U6, O6, Ka, b, c, d, e, f.
12. Placing lattice panels.	<u>Blueprint Reading to determine pattern.</u> (a) Materials. (b) Securing of panels. (c) Nailing.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 7: Interior Wall Covering.

UNIT 1: Insulation

OPERATIONS	KNOWLEDGE
1. Installing bat or blanket type insulation.	<u>Blueprint Reading to determine size and type of materials.</u> (a) Grades and thicknesses. (b) Features and functions of insulation. (c) Application as per manufacturers specifications. (d) Methods of fastening. (e) Use of stapler. (f) Care in handling. (g) Types and location of vapor barriers. (h) Extra vapor barrier where specified. (i) Ventilation and condensation control. <u>Science - Conduction, convection and radiation.</u>
2. Installing metal foil insulation.	(a) Types of materials. (b) B7, U1, O1, Ka, b, c, d, e, f, i. <u>Science - Conduction, convection and radiation.</u>
3. Installing loose type insulation.	(a) Types and materials. (b) B7, U1, O1, Ka, b, c, g, i.
4. Insulating with dead air spaces.	<u>Blueprint Reading to determine size and materials.</u> (a) Methods. (b) Use of building paper. (c) Use of fibre boards. <u>Science - Conduction, convection and radiation.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 7: Interior Wall Covering.

UNIT 2: Wall Covering.

OPERATIONS	KNOWLEDGE
1. Installing wall board lath.	(a) Types. (b) Breaking of joints. (c) Special nails and nailing. (d) Methods of cutting. (e) Care in handling. (f) Applying cornerite and corner bead. <u>Safety Precautions Code - 8.8.</u>
2. Installing metal lath.	(a) Types, sizes and weights. (b) Methods of fastening. (c) Cutting and shaping. (d) B7, U2, O1, Kf. <u>Safety Precautions Code - 8.8.</u>
3. Applying finished plaster board sheets.	(a) Types and sizes. (b) Care in handling. (c) Types of finished surfaces. (d) Methods of cutting. (e) Methods of fastening. (f) Manufacturers specifications. <u>Safety Precautions Code - 8.8.</u>
4. Applying finished fibre board sheets.	(a) B7, U2, O3, Ka, b, c, d, e, f. <u>Safety Precautions Code - 8.8.</u>
5. Applying plywood sheets.	(a) B7, U2, O3, Ka, b, c, d, e, f. (b) Joint Treatment. <u>Safety Precautions Code - 8.8.</u>
6. Applying wood sheathing.	(a) Types and materials. (b) Blocking and/or strapping for vertical application. (c) Nails and blind nailing. <u>Safety Precautions Code - 8.8.</u>

See Block 8, Unit 3 for the application of mouldings.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 7: Interior Wall Covering.

UNIT 3: Acoustic Treatment.

OPERATIONS	KNOWLEDGE
1. Applying acoustic tile.	(a) Types of materials, sizes and thickness. (b) Backing. (c) Spacing and aligning. (d) Types of cement. (e) Types of fasteners. <u>Science - Sound absorption.</u> <u>Safety Precautions Code-8.8.</u>
2. Soundproofing wall.	<u>Blueprint Reading to determine location and method.</u> (a) Spacing of staggered studding. (b) Materials and sizes. (c) Blanket type insulation. (d) Sound proofing of doors. <u>Science - Resonance</u> <u>Safety Precautions Code - 8.8.</u>
3. Soundproofing floor.	<u>Blueprint Reading to determine method.</u> (a) Sand and mortar deafening. (b) Sawdust and lime deafening. (c) Cork deafening. (d) Loose fill deafening. (e) Fibre board type. <u>Science - Sound transmission</u> <u>Safety Precautions Code - 8.10.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 1: Doors.

OPERATIONS	KNOWLEDGE
1. Assembling interior door jambs.	<u>Blueprint Reading to determine sizes.</u> (a) Door sizes and materials. (b) Types of jambs. (c) Nailing and temporary bracing. (d) Care in handling.
2. Setting interior door jambs.	<u>Blueprint Reading to determine size and swing of door.</u> (a) Test openings for truth. (b) Types (wood or steel). (c) Height of jambs for door clearance. (d) Levelling head. (e) Plumbing and aligning. (f) Wedging. (g) Blocking behind hinges. (h) Concealed nailing. (i) Types of nails. (j) Setting nails.
3. Applying vertical and head casings.	(a) Types and materials. (b) Back painting. (c) Jointing. (d) Sanding of surfaces. (e) Proper margins. (f) Types of joints. (g) Nails and nailing. (h) Care of stock. (i) Threshold or saddles where required.
4. Fitting doors.	(a) Types. (b) Check door for sweep or wind. (c) Methods of holding. (d) Use of jointer (hand or power). (d) Bevelling. (f) Tolerance. (g) Breaking of arrises. <u>Safety Precautions Code - 8.6.</u>
5. Hanging door.	<u>Blueprint Reading to determine swing of door.</u> (a) Types of hinges. (b) Location of hinges. (c) Use of butt gauge and butt chisel. (d) Cutting of gain. (e) Special tools. (f) Types and sizes of screws and drills. (g) Boring and counter boring for screws. (h) Use and care of screwdriver. (i) Aligning of slots.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 1: Doors.

OPERATIONS	KNOWLEDGE
6. Installing locks.	<u>Blueprint Reading to determine types.</u> (a) Types. (b) Proper height. (c) Methods of installing locks as per manufacturers specifications. (d) Boring tools (hand and power). <u>Safety Precautions Code - 8.6.</u>
7. Fitting and installing garage doors.	<u>Blueprint Reading to determine types and sizes.</u> (a) Types and materials. (b) Tolerances. (c) Types and methods of installing. (d) Placing of reglet. <u>Science - Balances and leverage.</u>
8. Fitting and installing accordian type doors.	<u>Blueprint Reading to determine sizes.</u> (a) Types and materials. (b) B8, U1, O5, Ka, b, c, d, e, f, g, h, i. (c) B8, U1, O6, Ka, b, c, d. (d) Special locks and bolts.
9. Fitting and installing sliding doors.	<u>Blueprint Reading to determine sizes and types.</u> (a) B8, U1, O7, Ka, b, c. (b) Special pulls and locks.
10. Fitting and installing double acting doors.	<u>Blueprint Reading to determine sizes.</u> (a) B8, U1, O7, Ka, b. (b) Types of spring hinges. (c) Special jambs. <u>Science - Tension.</u>
11. Installing metal doors.	<u>Blueprint Reading to determine sizes.</u> (a) B8, U1, O5, Ka, e, h, i. (b) B8, U1, O6, Ka, c. (c) Care in handling.
12. Fitting and installing special doors.	(a) Installation as per manufacturers specifications.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 2: Windows.

OPERATIONS	KNOWLEDGE
1. Fitting sash.	(a) Types and sizes. (b) Materials. (c) Scribing. (d) Care in handling. (e) B8, U1, O4, Ka, d, e, f, g. (f) Numbering of sash and frame. (g) Oiling of jambs. (h) Weather Stripping.
2. Installing sash balances if applicable.	<u>Blueprint Reading to determine types.</u> (a) Types. (b) Methods of installing as per manufacturers specifications. (c) Use of power table saw. (d) Weighing. <u>Science - Balance, tension, spirals.</u> <u>Safety Precautions Code - 8.6.</u>
3. Applying stool and apron.	<u>Blueprint Reading to determine style.</u> (a) Types and materials. (b) Treatment of joints. (c) Returning of stool and apron on self. (d) Sanding. (e) Nails and nailing. (f) Tolerances. (g) Proper proportion of overhand on return.
4. Applying vertical and head casings.	<u>Blueprint Reading to determine style.</u> (a) B8, U1, O3, Ka, b, c, d, e, f, g, h.
5. Applying window stops.	(a) Types and materials. (b) Types of joints. (c) Methods of fastening. (d) Tolerance.
6. Applying lifts, fasteners, sockets, stopbead adjusters and weather stripping.	<u>Blueprint Reading to determine style and location.</u> (a) Types and materials. (b) Methods of installing as per manufacturer's specifications.
7. Hanging casement and/or transom sash.	<u>Blueprint Reading to determine swing.</u> (a) B8, U1, O5, Ka, b, c, d, e, f, g, h, i.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 2: Windows.

OPERATIONS	KNOWLEDGE
8. Applying casement and/or transom adjusters and locks.	<u>Blueprint Reading to determine types.</u> (a) B8, U1, O6, Ka, c, d.
9. Installing picture window.	<u>Blueprint Reading to determine type.</u> (a) Types. (b) Sash or frame installation. (c) Caulking and flashing. (d) Care in handling. <u>Science - Condensation control.</u>
10. Fitting and installing storm sash where applicable.	(a) B8, U2, O1, Ka, b, c, d, e, f. (b) Types of hardware. (c) Methods of fastening and numbering. <u>Safety Precautions Code - 8.9.</u>
11. Fitting and installing screens.	<u>Blueprint Reading to determine sizes and materials.</u> (a) B8, U2, O10, Ka, b, c. <u>Safety Precautions Code - 8.9.</u>
12. Fitting and installing shutters.	<u>Blueprint Reading to determine types and sizes.</u> (a) Types, materials and hardware. (b) Methods of fastening. <u>Safety Precautions Code - 8.9.</u>

BLOCK 8: Interior Finish

UNIT 3: Horizontal Trim.

OPERATIONS	KNOWLEDGE
1. Applying base board, moulding and carpet strip.	<u>Blueprint Reading to determine types.</u> (a) Types and materials. (b) Back painting. (c) Scribing, mitering and coping. (d) Proper placing of joints. (e) Nails and nailing. (f) Methods of joining. (g) Bending of mouldings. (h) Paper dust-seal.
2. Applying ceiling moulding, plate rail, chair rail, dado or cap moulding, picture moulding, raking mouldings.	<u>Blueprint Reading to determine type.</u> (a) B8, U3, O1, Ka, b, c, d, e, f, g. (b) Proper placing of joints.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish

UNIT 4: Finished Floors

OPERATIONS	KNOWLEDGE
1. Laying finished strip floors	<u>Blueprint Reading to determine material.</u> (a) Types and grades, sizes of materials. (b) Underlay. (c) Nails and nailing. (d) Matching. (e) Care in handling. <u>Science - Moisture control.</u>
2. Laying special floors. (Parquet, Block and Deck)	<u>Blueprint Reading to determine materials.</u> (a) Types, grades, and sizes of materials. (b) Rigid underlay. (c) Methods and types of fastening. (d) Care in handling. (e) Pattern procedure. <u>Science - Moisture control.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 5: Built in Fixtures.

OPERATIONS	KNOWLEDGE
1. Laying out kitchen cabinets.	<u>Blueprint Reading to determine location and sizes.</u> (a) Layout rod. (b) Check walls & floor for truth. (c) Location of plumbing and sink ventilation. (d) Location of electrical outlets.
2. Constructing carcass frame. (bottom)	(a) Size, types and proper finish of materials. (b) Types of joints. (dowel and mortise and tenon). (c) Glues, gluing and clamping. (d) Hand and machine mortising. (e) Dowelling jig. (f) Rabbet plane. (g) Power tools. (h) Nails and nailing. <u>Safety Precautions Code - 8.6.</u>
3. Constructing tables and counters.	(a) Types and materials. (b) Edge to edge glue joints. (c) Prevention of warping. (d) Construction of round corners.
4. Constructing and fitting drawers.	(a) Materials and hardware. (b) Types of joints, drawer fronts and guides. (c) Tolerances. (d) Types of fasteners. (e) Drawer divisions and drawer stops. (f) Breaking of arrises on top of drawer.
5. Constructing and fitting doors.	<u>Blueprint Reading to determine type.</u> (a) Types and materials. (b) Door construction. (c) Tolerances.
6. Hanging doors.	<u>Blueprint Reading to determine swing.</u> (a) Types of hinges. (b) Location of hinges. (c) Types of catches and pulls. (d) Installation as per manufacturers specifications.
7. Installing counter covering.	<u>Blueprint Reading to determine colors.</u> (a) Types of materials. (b) Methods of application. (c) Cements. (d) Mouldings, wood, metal and plastic. (e) Special tools.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 5: Built in Fixtures.

OPERATIONS	KNOWLEDGE
8. Constructing and installing top kitchen cabinets.	<u>Blueprint Reading to determine location and sizes.</u> (a) Types of materials. (b) Shelving. (c) Dado joints (blind dado). (d) Hand or power router. (e) Plate groove or cleat. (f) Types of back or backing. (g) Methods of fastening. (h) Methods of securing to walls. (i) Dropped ceiling. (j) Valence boards. (k) B8, U5, O6, Ka, b, c, d. (l) Ceiling mouldings. <u>Safety Precautions Code - 8.6.</u>
9. Building and installing book cases, linen closets and medicine cabinets.	<u>Blueprint Reading to determine location and sizes.</u> (a) B8, U5, O8, Ka, b, c, d, f, g, h, k, l. (b) Adjustable shelves and special methods of support.
10. Constructing and installing mantel.	<u>Blueprint Reading to determine type and size.</u> (a) Types of materials. (b) Types of joints. (c) Reeding and fluting. (d) Types and application of mouldings. (e) Special mantel tops. (f) Prevention of warping. (g) Scribing. (h) Methods of securing.
11. Installing factory built fixtures.	<u>Blueprint Reading to determine location.</u> (a) Check walls, floors and cabinets for truth. (b) Scribing and fitting. (c) Methods of securing. (d) Applying various types of mouldings. (e) B8, U5, O7, Ka, b, c, d, e.
12. Building and installing a lazy susan.	<u>Blueprint Reading to determine location and sizes.</u> (a) Types and materials. (b) Methods of mounting.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 8: Interior Finish.

UNIT 6: Dado and Wainscot Treatment.

OPERATIONS	KNOWLEDGE
1. Applying dado finish.	<u>Blueprint Reading to determine types of finish.</u> (a) Types and materials. (b) Adhesives. (c) Other methods of securing. (d) Application. (e) Mouldings, wood and metal.

BLOCK 8: Interior Finish.

UNIT: 7: Special Hardware

OPERATIONS	KNOWLEDGE
1. Installing special hardware.	<u>Blueprint Reading to determine type and location.</u> (a) Types of door hardware - closers. stops. kick and push plates. mail slots. weather stripping. types of bolts. panic bars. special locks and hinges. metal thresholds. draft stops. louvers. (b) Special coat closet hardware. (c) Special bathroom hardware. (d) Ventilators.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 9: Stair Building

UNIT 1: Straight Stairs

OPERATIONS	KNOWLEDGE
1. Laying out and cutting stringers, and/or carriages.	<p><u>Blueprint Reading to determine overall height and run. Check head clearance and maximum run, and determine thickness of floor and finished tread.</u></p> <ul style="list-style-type: none"> (a) Materials and sizes. (b) One less tread than risers. (c) Proportion of riser height to tread run. Uniformity necessary. (d) Deduction for difference between tread and finished floor. (e) Pitch board and/or steel square methods. (f) Methods of cutting stringers. (g) Methods of building stringers. (h) Features of housed stringers and methods of cutting. (i) Use of story pole. <p><u>Mathematics - Division, fractions, decimals to one place.</u></p> <p><u>Safety Precautions Code - 8.6.</u></p>
2. Placing stringers.	<ul style="list-style-type: none"> (a) Number of stringers required. (b) Methods of fastening. (c) Aligning. (d) Wall blocking. (e) Temporary treads. <p><u>Safety Precautions Code - 8.11.</u></p>
3. Placing newel posts.	<p><u>Blueprint Reading to locate newel posts.</u></p> <ul style="list-style-type: none"> (a) Materials. (b) Proper height and position in relation to center of baluster. (c) Plumbing and aligning. (d) Methods of securing and temporary bracing. (e) Drop. <p><u>Safety Precautions Code - 8.11.</u></p>
4. Cutting and fitting skirt board.	<ul style="list-style-type: none"> (a) Types and materials. (b) Mitering on the rake. (c) Straddle board. (d) Methods of fastening.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 9: Stair Building.

UNIT 1: Straight Stairs.

OPERATIONS	KNOWLEDGE
5. Cutting and fitting risers.	(a) Types of materials. (b) Aligning and shimming. (c) Mitering. (d) Methods of fastening.
6. Cutting and fitting wall base board.	(a) Types of materials. (b) Intersecting with level base. (c) Use of easements. (d) Methods of securing.
7. Placing finished treads.	(a) Types and materials. (b) Mitering overhang for returns. (c) Dovetailing or doweling balusters. (d) Wedging.
8. Placing hand rail.	<u>Blueprint Reading to determine type of rail and materials.</u> (a) Use of draw bolts. (b) Proportion of height to rake of stairs. (c) Use of easements and ramps. (d) Methods of securing. (e) Continuous rail with wreaths. <u>Mathematics - Geometry, tangents.</u>
9. Placing balusters.	<u>Blueprint Reading to determine materials, spacing, and type of baluster.</u> (a) Methods of securing. (b) Aligning of turnings of the balusters. (c) Temporary bracing of hand rail while placing balusters.
10. Cutting and fitting return nosing.	(a) Returning on self. (b) Proper margin of return. (c) Securing. (d) Scroll brackets when required.
11. Placing scotia moulding.	(a) Features and functions of scotia. (b) Return on self. (c) Nailing.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 9: Stair Building

UNIT 1: Straight Stairs.

OPERATIONS	KNOWLEDGE
12. Cutting and placing wall hand rail.	<u>Blueprint Reading to determine materials and type.</u> (a) Finishing of ends of hand rail. (b) Proper height to rake of stairs. (c) Use of hand rail brackets. (d) Joining of hand rail - draw bolts.
13. Placing parapet and/or buttress type finish and/or closed string.	<u>Blueprint Reading to determine materials and type.</u> (a) B9, U1, 03, Kb, c, d, e. (b) B9, U1, 05, Kb, d. (c) B9, U1, 07, Kd. (d) B9, U1, 08, Ka, b, c, d, e. (e) B9, U1, 09, Ka, b, c. (f) B9, U1, 011, Ka, c. (g) Rake panels.
14. Placing bull nosed, piano, and/or curtail steps including riser.	<u>Blueprint Reading to determine materials, sizes and design.</u> (a) Methods of securing. (b) Scribing.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 9: Stair Building.

UNIT 2: Platform Stairs.

OPERATIONS	KNOWLEDGE
1. Locating and constructing platform or platforms.	<u>Blueprint Reading to determine location.</u> (a) Reasons for platform. (b) Types and strength of materials. (c) Level of platform (multiple of riser). (d) Construction details and methods of securing. <u>Safety Precautions Code - 8.11.</u>

NOTE: Where applicable, use similar Operations and Knowledge as indicated in Block 9, Unit 1, 01 to 14 inclusive.

BLOCK 9: Stair Building.

UNIT 3: Winders.

OPERATIONS	KNOWLEDGE
1. Laying out and cutting winder stringers: (a) Quarter Turn (b) Half Turn.	<u>Blueprint Reading to determine location of winders.</u> (a) Types of materials. (b) Methods of layout (full size) or true development of winder stringer. (c) Line of travel. (d) Building Code. (e) Bevelling stringers on rake. <u>Mathematics - Geometry, Angles.</u> <u>Safety Precautions Code - 8.11.</u>
2. Placing winder stringers.	(a) Methods of framing and securing. (b) Methods of aligning stringers and furring for soffit stairs.
3. Building winder templates.	(a) Allowance for nosing and fitting.

NOTE: Where applicable, use similar Operations and Knowledge as indicated in Block 9, Units 1, 01 to 14 inclusive.

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 10: Carpentry in Masonry Construction

UNIT 1: General

OPERATIONS	KNOWLEDGE
1. Installing nailing strips and/or blocks in masonry walls.	<u>Blueprint Reading to determine size and location.</u> (a) Features and functions. (b) Spacing, keying and anchoring.
2. Installing door and window frames in masonry walls.	<u>Blueprint Reading to determine location and sizes.</u> (a) Aligning and temporary bracing. (b) Adequate stays, spreaders and protection of frames. (c) Water bar or reglet. (d) Preservatives. (e) Draft proofing.
3. Installing furring and grounds.	<u>Blueprint Reading to determine location.</u> (a) Features and functions. (b) Materials and sizes. (c) Aligning and fastening. (d) Special tools. <u>Safety Precautions Code - 8.6.</u>
4. Installing door bucks.	<u>Blueprint Reading to determine location and sizes.</u> (a) Bll, Ul, O3, Ka, b, c, d. (b) Temporary bracing.
5. Constructing and placing centers for arches: (a) Segmental (b) Elliptical (c) Gothic (d) Tudor (four centered) (e) Jack	<u>Blueprint Reading to determine size and design.</u> (a) Features and functions of arches. (b) Methods of laying out. (c) Allowance for thickness of lagging. (d) Strength of materials. (e) Temporary supports. (f) Time and care in removing. (g) Jack arch camber <u>Mathematics - Geometry.</u> <u>Safety Precautions Code - 8.8.</u>
6. Placing screeds.	<u>Blueprint Reading to determine shape of surface.</u> (a) Features and functions of screeds. (b) Materials and types of screeds. (c) Methods of aligning and securing.
7. Placing joist anchors.	<u>Blueprint Reading to determine materials, sizing and spacing.</u> (a) Features and functions of joist anchors. (b) Methods of securing. <u>Safety Precautions Code - 8.8.</u>

ANALYSIS OF THE CARPENTRY TRADE

BLOCK 10: Carpentry in Masonry Construction UNIT 1: General

OPERATIONS	KNOWLEDGE
8. Framing hearth supports.	<u>Blueprint Reading to determine sizes.</u> (a) Types and methods of fastening. (b) Reinforcing. (c) Building code regulations.
9. Making fire cuts on ends of joist.	(a) Purpose of fire cutting. (b) Angle of cut. (c) Preservatives. (d) Airspace. (e) Power tools. <u>Safety Precautions Code - 8.6.</u>
10. Placing steel bar joist.	<u>Blueprint Reading to determine location and sizes.</u> (a) Rigging, scaffolding. (b) Methods of fastening and bridging. <u>Safety Precautions Code - 8.6., 8.7., 8.8.</u>
11. Installing high-rib lath.	(a) Methods of securing. <u>Safety Precautions Code - 8.8.</u>
12. Securing miscellaneous items to masonry as: handrail brackets, coat hooks, bathroom fixtures.	<u>Blueprint Reading to determine location.</u> (a) Methods of fastening. (b) The use of toggle bolts, expansion shields, rawl plugs, lead anchors and special tools and fastening devices. <u>Safety Precautions Code - 8.6.</u>
13. Constructing template for cornice moulds.	<u>Blueprint Reading to determine shape and sizes.</u> (a) Methods of cutting. (b) Materials.
14. Caulking window and door frames.	<u>Blueprint Reading to determine materials, and where required.</u> (a) Methods of caulking. (b) Types of materials.
15. Installing staff beads.	<u>Blueprint Reading to determine materials.</u> (a) Materials. (b) Fastening. (c) Fitting.

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